



Docket No. 245600US0/p

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Hideyuki OTSUKA, et al.

SERIAL NO: 10/714,853

GAU:

FILED: November 18, 2003

EXAMINER:

FOR: ELECTROPHOTOGRAPHIC PRINTING METHOD, MONOAZO IRON COMPLEX COMPOUND, CHARGE CONTROLLING AGENT USING THE SAME AND TONER USING THE CHARGE CONTROLLING AGENT

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- The applicant(s) wish to make of record the references, some of which are cited in the attached International Search Report listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon

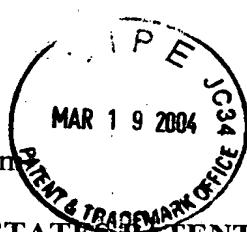
Registration No. 24,618

**Corwin P. Umbach, Ph.D.
Registration No. 40,211**

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 05/03)

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STATEMENT OF RELEVANCY**References AT (JP 43-17955) on page 1 of Form PTO-1449:**

English translation of relevant portion of JP-B-43-17955 published on July 30, 1968

The present inventors have developed an excellent dye having negative properties by noting this point. As this result, an improved developing powder having excellent electrostatic properties, which overcomes all of defects of a conventionally used dye, can be produced.

The present invention provides a negative electrophotographic developing powder containing a 2:1 type metal complex salt dye as a coloring agent, which is obtainable by metallizing a monoazo dye expressed by the general formula,

A-N=N-B

[wherein A represents a residue of a diazo component selected from the group consisting of O-aminophenol, 4-chloro-2-aminophenol, 4 or 5-nitro-2-aminophenol, 4,6-dichloro-2-aminophenol and anthranilic acid, and B represents a coupling component selected from the group consisting of β -naphthol, phenyl methyl pyrazolone, cresol and acetoacetic acid anilide (provided that there is no case that A is 5-nitro-2-aminophenol and B is β -naphthol at the same time)].

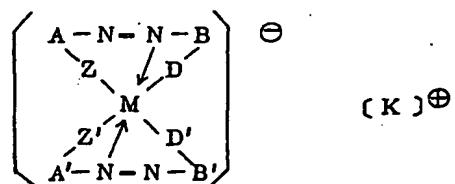
The above dye has electrostatically negatively chargeable properties, and it is quite easily possible to obtain a negatively chargeable developing powder by mixing with an appropriate resin for a developing powder at a desired ratio.

Reference AU (JP 43-27596) on page 1 of Form PTO-1440:

English translation of relevant portion of JP-B-43-27596 published on November 27, 1968

The present inventors have developed a pigment having negative properties and having a quite satisfactory compatibility with a used resin by noting this point. As this result, a developing powder having excellent electrostatic properties, which overcomes all of defects of a conventionally used coloring agent, can be produced.

The present invention provides an electrostatic developing powder containing a 2:1 type metal complex salt pigment as a coloring agent, which is expressed by the formula,



[wherein A and A' represent a residue of a compound selected from the group consisting of O-aminophenol, 4-chloro-2-aminophenol, 4 or 5-nitro-2-aminophenol, 4,6-dichloro-2-aminophenol and anthranilic acid, which may be the same or different, B and B' represent a residue of a compound selected from the group consisting of β-naphthol, β-naphthylamine, N-methyl-β-naphthylamine, 1-phenyl-3-methyl-5-pyrazolone, cresol and acetoacetic acid anilide, which may be the same or different (provided that there is no case that A and A' are 5-nitro-2-aminophenol and B and B' are β-naphthol at the same time), Z and Z' represent respectively -O- or -COO- which is present at the ortho-position to the azo group, which may be the same or different, D and D' represent respectively -O-, -NH- or -N·alkyl- which is present at the ortho-position to the azo group, which may be the same or different, M represents a metal atom, and K represents a cation component derived from dodecylamine, xylidine or dodecyl ethanolamine or a cation component of hexadecyltrimethyl ammonium halogenide or a basic dye].

In the above formula, examples of a metal atom represented by M include iron, aluminum, vanadium, cobalt, chromium and zinc, and chromium and cobalt are particularly preferable.



SHEET 1 OF 2

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 245600US0		SERIAL NO. 10/714,853	
LIST OF REFERENCES CITED BY APPLICANT		APPLICANT					
		Hideyuki OTSUKA, et al.					
		FILING DATE		November 18, 2003		GROUP	
U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	2001/0004667 A1	06/21/2001	M. OKUBO, et al.			
	AB	5,529,872	06/25/1996	K. GRYCHTOL, et al.			
	AC	5,204,453	04/20/1993	B. CHAMBON, et al.			
	AD	2002/0156161 A1	10/24/2002	R. KOSHIDA, et al.			
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION		
	AE	WO 03/098617	11/27/2003	WIPO	YES		NO
	AF	2003-231843	08/19/2003	JAPAN			
	AG	2004-2618	01/08/2004	JAPAN			
	AH	2003-15364	01/17/2003	JAPAN			
	AI	2002-82481	03/22/2002	JAPAN			
	AJ	2002-82480	03/22/2002	JAPAN			
	AL	2001-356526	12/26/2001	JAPAN			
	AL	2001-194830	07/19/2001	JAPAN			
	AM	11-133670	05/21/1999	JAPAN			
	AN	10-48875	02/20/1998	JAPAN			
	AO	0 977 093	02/02/2000	EUROPE			
	AP	WO 94/03841	02/17/1994	WIPO (with English Abstract)			X
	AQ	60-106859	06/12/1985	JAPAN			
	AR	60-107655	06/13/1985	JAPAN			
	AS	2-305832	12/19/1990	JAPAN (with English Abstract)			X
	AT	43-17955	07/30/1968	JAPAN			X
	AU	43-27596	11/27/1968	JAPAN			X
	AV	57-167033	10/14/1982	JAPAN (with English Abstract)			X
	AW	8-500912	01/30/1996	JAPAN (with English Abstract and corr. US 5,529,872)			X
	AX	61-155464	07/15/1986	JAPAN (with English Abstract)			X
	AY	11-20317	01/26/1999	JAPAN (with English Abstract)			X
	AZ	5-192638	08/03/1993	JAPAN (with English Abstract)			X
					<input checked="" type="checkbox"/> Additional References sheet(s) attached		
Examiner					Date Considered		
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							



SHEET 2 OF 2

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 245600US0	SERIAL NO. 10/714,853	
LIST OF REFERENCES CITED BY APPLICANT		APPLICANT Hideyuki OTSUKA, et al.				
		FILING DATE November 18, 2003		GROUP		
FOREIGN PATENT DOCUMENTS						
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES NO	
	AA	7-32535	02/03/1995	JAPAN (with English Abstract)		X
	AB	7-32540	02/03/1995	JAPAN (with English Abstract)		X
	AC	7-32539	02/03/1995	JAPAN (with English Abstract)		X
	AD	7-227570	08/29/1995	JAPAN (with English Abstract)		X
	AE	7-32538	02/03/1995	JAPAN (with English Abstract)		X
	AF	62-225563	10/03/1987	JAPAN (with English Abstract and corr. US 5,204,453)		X
	AG					
	AH					
	AI					
	AJ					
	AL					
	AL					
	AM					
	AN					
	AO					
	AP					
	AQ					
	AR					
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)						
	AS					
	AT					
	AU					
	AV					
	AW					
	AX					
	AY					
	AZ				<input type="checkbox"/> Additional References sheet(s) attached	
Examiner				Date Considered		

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